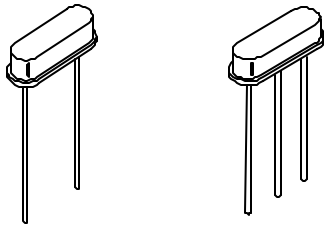
查询LP21供应商

Pletronics, Inc.
19013 36th Ave. West • Suite H • Lynnwood, WA 98036, USA

LP49, LP24, & LP21



CRYSTALS IN HC-49/S THRU-HOLE PACKAGE
(**LP49**: 3.5 mm high; **LP24**: 2.5 mm high; **LP21**: 2.1mm high)

STANDARD SPECIFICATIONS:

Frequency Range	3.180 MHz - 72.000 MHz (Consult factory for specific available frequencies)		
Oscillation Modes	fundamental (AT-cut)	fundamental (BT-cut)	3rd overtone (AT-cut)
	3.180 - 30.000 MHz	24.001 - 47.000 MHz	27.000 - 72.000 MHz
Calibration Frequency Tolerance at 25°C	± 50 PPM is standard, but tighter tolerances also available for certain frequencies.		
Frequency Stability over Operating Temperature Range	± 50 PPM is standard, but tighter tolerances also available for certain operating temperature ranges.		
Operating Temperature Range	0 - 70°C is standard, but can be extended to -40 - +85°C for certain frequencies (just add 'E' after model number).		
Load Capacitance	10 pF - ∞ pF (∞ pF means Series Resonance). To be specified by customer.		
Equivalent Series Resistance (ESR)	See table on next page.		
Drive Level	50µW is standard, but customer may specify different drive level		
Aging at 25°C	± 5 PPM per year		
Shunt Capacitance	7 pF maximum		
Pullability	May be specified by customer in terms of frequency shift required over a certain range of load capacitance, (e.g.+100 PPM from CL=12 to CL=18 pF) This requirement may be expressed also in terms of motional capacitance in fanto-Farad (fF).		
Packaging	Bulk (100 per bag, 2000 per box)		

PART NUMBERING GUIDE:

- **The Pletronics part number for an LP crystal consists of the following 4 elements:**

1. **Model Number:** LP49, LP24, or LP21

2. **Load Capacitance:**
   When the load required is ∞ pF, that is, the calibration is at **series resonance**:
   LP49-SR, LP24-SR, or LP21-SR;

   When the load required is XX pF: LP49-XX, LP24-XX, or LP21-XX.

3. **Optional 3rd Lead from the Base (Case Grounded):**
   3LP49

4. **Frequency of Operation in MHz**

EXAMPLES: LP49-SR-10.000 MHz; LP24-18-10.000 MHz; 3LP49-20-10.000 MHz

- When customer's requirements are non-standard, a special engineering part number will be assigned.

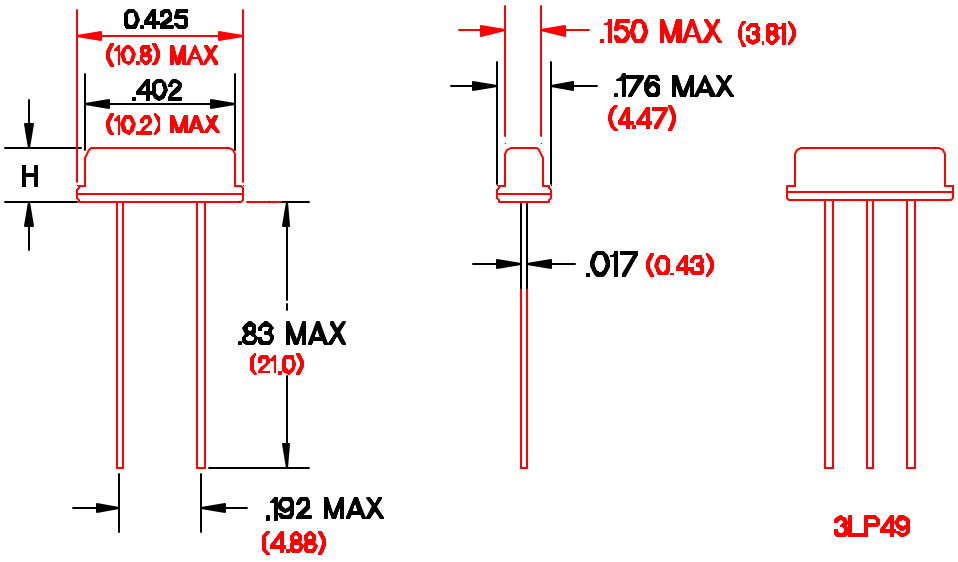
LP49, LP24, & LP21 CRYSTALS

STANDARD EQUIVALENT SERIES RESISTANCE VALUES:

Oscillation Mode	Frequency Range	ESR **
Fundamental Mode (AT-cut)	3.180 - 7.000 MHz	130 ohms maximum
	7.001 - 15.999 MHz	50 ohms maximum
	16.000 - 25.000 MHz	40 ohms maximum
	25.001 - 30.000 MHz	40 ohms maximum
Fundamental Mode (BT-cut)	24.001 - 36.000 MHz	50 ohms maximum
	36.001 - 47.000 MHz	100 ohms maximum
3rd Overtone Mode (AT-cut)	27.000 - 56.000 MHz	100 ohms maximum
	56.001 - 72.000 MHz	100 ohms maximum

** ESR values lower than indicated may be available. Please contact factory for lower ESR values.

PACKAGE OUTLINE (NOT TO SCALE):



INCHES (MILLIMETERS)

Max Height (H)	
LP49	.140 (3.56)
LP24	.100 (2.5)
LP21	.082 (2.1)

January 2000